

## WIDE DYNAMIC RANGE DIGITAL IMAGING SYSTEM AND METHOD

ABSTRACT

A digital x-ray imaging device and method. The imaging device comprises a top electrode layer; a dielectric layer; a sensor layer comprising a photoconductive layer and a plurality of pixels, each pixel comprising a charge-  
5 collecting electrode; a thin film transistor (TFT) readout matrix connected to the charge-collecting electrodes; and a variable power supply adapted to provide a range of voltages between the top electrode layer and the TFT readout matrix. The variable power supply may comprise a programmable power supply. The method comprises  
10 varying the voltage between the top electrode layer and the TFT readout matrix of a TFT-based direct digital x-ray imaging device to provide an acceptable signal-to-noise ratio over a greater range of exposures than provided at a single voltage. The method may be particularly useful in non-destructive testing applications.

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